(b) REMARKS

The pending claims are 1, 4-7, 9-11, 14 and 15 of which claims 1, 4, 14 and 15 are in independent form. The claims were amended pursuant to paragraphs [0032] and [0035] to recite how the lens and the opening in the light shielding layer cooperate to converge resonating light emitted from the microcavity to provide enhanced performance.

Claims 1, 4, 7, 9, 10, 14 and 15 were rejected as obvious over Forrest '226 in view of Wilson '835 and further in view of Matthies '303. The Examiner has not given patentable weight to the limitations of color purity and degradation and the diagonally blocked light rays, since these are alleged not to be structural limitations. The Examiner admits Forrest does not teach a light gathering structure which includes a lens having a focus, and opening of the light-shielding layer disposed in the vicinity of the focus of the lens and the light-shielding layer is a light-absorbing member capable of preventing external light transmitted from the outside from being reflected. Wilson is said to teach a light-emitting device with a light-gathering structure, including a lens with a focus and that the lens is capable of focusing the emitted light beam onto a plane. Matthies is said to disclose a light-emitting device with a light-absorbing member which increases display contrast.

Claims 5 and 11 were rejected as obvious over Forrest '266 in view of Wilson '835 and Matthies '303 and Biebuyck '994. Biebuyck is said to disclose a luminescent device with a light-gathering layer having transparent members with the different reflective indexes and with spherical faces disposed therebetween.

Claim 6 was rejected over the above-noted references further in view of Rawlings '434. Rawlings is said to disclose a display with convex lenses to used to focus the emitted light. The grounds of rejection are respectfully traversed.

The claims have been amended to recite the enhanced properties provided by the claimed apparatus and how the structural elements cooperate to converge the resonating light to enhance monochromaticity and to provide highly directed light. In chemical apparatus inventions one must consider not only the subject matter recited in the claims, but also the inherent properties of the claimed invention. In re Antonie, 195 USPQ, 6, 8 (CCPA 1977). The CCPA has recognized the propriety of defining an invention by what it does, rather than what it is. In re Caldwell, 138 USPQ 243 (CCPA 1963). Finally, the language in the preamble can limit the invention as a whole if it gives meaning to the claim to properly define the invention, Kropa v. Robie, 88 USPQ 478 (CCPA 1951).

Here, the preamble recites the unexpected results of the elements cooperation to give enhanced directed and monochromatic light. The Examiner has failed to give probative weight to the limitations in the preamble. This is improper based on the above-noted controlling authority.

The Examiner admits Forrest does not teach that the opening of the light-shielding layer is disposed in the vicinity of the focus of the lens. The Examiner has not specifically cited a reference as teaching this feature. Further, the Examiner has not responded to Applicants' arguments that the problem of degrading of color purity is not found in the art nor is its solution. Accordingly, the Examiner has not responded to the

arguments that the present claimed invention unexpectedly solves problems of color purity degradation and diagonally-emitted light rays. These unexpected results rebut any presumption that would have been obvious to combine the features of the secondary references proposed in Forrest.

Substantial differences exist between the claimed invention and Forrest. The present claimed invention employs an organic electroluminescent device having a microcavity structure for emitting light resonating in the microcavity structure (emphasis added). As noted in specification paragraph [0031] the mirror layer 14 and reflective cathodes 11 form optical resonator structures (microcavity structures). In paragraph [0032] light rays are emitted from the optical resonator structure and are focused by the light gathering structure and transmitted through opening 16 in the light shielding layer. Light rays 20 emitted in a diagonal direction with a shorter wavelength are blocked by the light shielding layer and not transmitted outside the display. This results in enhanced contrast and enhanced color purity.

The structure 112 in Forrest Fig. 2C is a waveguiding layer, not an optical resonator structure (microcavity structure). The light emitted from OLED 113 is repeatedly reflected between reflective layer 111 and OLED 113 within waveguide layer 112. Waveguide 112 runs parallel to the substrate and, accordingly, light is reflected within the waveguide from an emitting point to an end point, where it is reflected by reflectors 114 outside the structure. Shorter length light rays are included in the rays directed externally of the display. Accordingly, the light emitted at various angles from Forrest lacks both the monochromaticity and the direction, as compared to emitted light from the claimed device.

The defects of Forrest are not remedied by Wilson or Matthias. Wilson merely discloses an OLED 200 and a lens 242 in Fig. 3. However, these features merely focus light onto a plane 244. Wilson does not disclose a light-shielding layer having an opening disposed in the vicinity of the focus of the lens of the light gathering structure. Wilson does not disclose a light shielding layer to block light emitted in a diagonal direction.

Therefore, even if Wilson were combined with Forrest, it would fail to block diagonally emitted light and would not prevent color shift or degradation of color printing, since all light emitted in Wilson is directed to plane 244. The defects of Forrest and Wilson are not resolved by Matthias.

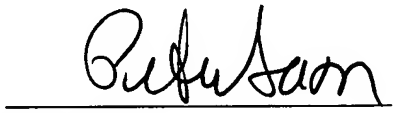
Matthias discloses a light shielding member 28 and lens 20 in Figs. 6 and 7. As disclosed paragraphs [0036-0037] in Matthias light is emitted by elements 15 (rays B and C). The light gathering structure 20a (lens) refracts the light, and as shown in Fig. 6 or 7, the light is emitted. A dark region 28 is said to be a light shielding layer. However, there is not an opening in the shielding layer (dark region) to receive light gathered by the lens. The light shielding layer does not block light emitted in a diagonal direction, since all light is directed away from dark region 28. The dark region is present to obscure gap A between layers 10 and 12. Since region 28 lacks an opening for passing emitted light and does not block diagonally emitted light, it fails to remedy the defects of Forrest and Wilson.

REQUEST FOR INTERVIEW

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and early passage to issue of the present application. The Examiner is requested to contact the undersigned after reviewing this response in order to further advance prosecution and resolve any remaining issues. It is believed that a brief interview, if agreeable, should be helpful to produce a disposal of this matter.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address given below.

Respectfully submitted,



Peter Saxon
Attorney for Applicants
Registration No. 24,947

FITZPATRICK, CELLA, HARPER & SCINTO
30 Rockefeller Plaza
New York, New York 10112-3801
Facsimile: (212) 218-2200
NY_608617 1v1